

Tutorial – 2

SD2

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Q1. Variables and operators.

```
package Week2;
import java.util.*;

public class Qone {
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);
        System.out.print("Enter the first number : ");
        double firstNumber = input.nextDouble();
        System.out.print("Enter the second number : ");
        double secondNumber = input.nextDouble();
        double sum = firstNumber + secondNumber;
        System.out.println("sum is " + sum);

    }
}
```

Q2. Age

```
package Week2;
import java.util.*;

class Qtwo{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);
        System.out.print("Enter the age : ");
        int age = input.nextInt();
    }
}
```

```

    if (age >= 18){
        System.out.println("Over 18");
    }
    else {
        if (age > 0){
            System.out.println("Under 18");
        }
        else{
            System.out.println("The age entered is incorrect");
        }
    }
}
}
}

```

Q3. Module Mark Calculation

```

package Week2;
import java.util.*;
public class Qthree {

    public static void main(String[] args){
        Scanner input = new Scanner(System.in);
        System.out.print("Enter the ICT marks : ");
        float ictMarks = input.nextFloat();
        System.out.print("Enter the CW marks : ");
        float cwMarks = input.nextFloat();
        if ((ictMarks >= 30) && (cwMarks >= 30)){
            float final_mark = ((ictMarks + cwMarks) / 2);
            if (final_mark >= 40){
                System.out.println("Module passed\n Marks : " + final_mark);
            }
            else {
                System.out.println("Module failed ");
            }
        }
    }
}
}

```

Q4. Grade Classification

```
package Week2;
import java.util.*;
import java.util.Scanner;
public class Qfour {

    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.print("enter the marks : ");
        int mark = input.nextInt();
        if (mark > 100){
            System.out.println("Invalid value");
        }
        else if (mark > 69){
            System.out.println("First class");
        }
        else if( mark > 59){
            System.out.println("Second class (Upper)");
        }
        else if(mark > 49){
            System.out.println("Second class (Lower)");
        }
        else if (mark > 39){
            System.out.println("Thirds class");
        }
        else {
            System.out.println("Invalid value");
        }
    }
}
```

Q5. Calculator

```
package Week2;

import java.util.Scanner;

public class Qfive{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);
        System.out.print("Enter first number : ");
        int fistNumber = input.nextInt();
        System.out.print("Enter second number : ");
```

```

    int SecondNumber = input.nextInt();
    System.out.print("Enter the operator (+,-,/,*): ");
    String operator = input.next().trim();
    switch (operator) {
        case "+":
            System.out.println("Result: " + (firstNumber + SecondNumber));
            break;
        case "-":
            System.out.println("Result: " + (firstNumber - SecondNumber));
            break;
        case "*":
            System.out.println("Result: " + (firstNumber * SecondNumber));
            break;
        case "/":
            if (SecondNumber != 0) {
                System.out.println("Result: " + (firstNumber / SecondNumber));
            } else {
                System.out.println("Error: Division by zero");
            }
            break;
        default:
            System.out.println("Invalid operator");
            break;
    }
}
}

```

Q6. Exam eligibility

```

package Week2;

import java.util.*;
class Qsix {

    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.print("Enter the number of classes held : ");
        int noOfClassesHeld = input.nextInt();
        System.out.print("Enter the number of classes attended : ");
        int noOfClassesAttended = input.nextInt();
        int attendancePercentage = (noOfClassesAttended * 100) / noOfClassesHeld;
    }
}

```

```

        System.out.println("Attendance Percentage: " + attendancePercentage +
"%");
        if (attendancePercentage >= 75) {
            System.out.println("You are allowed to sit in the exam");
        } else {
            System.out.print("Do you have a medical cause? (Y/N) : ");
            char medicalCause = input.next().charAt(0);
            if (medicalCause == 'Y') {
                System.out.println("You are allowed to sit in the exam");
            }

            else{
                System.out.println("You are not allowed to sit in the exam");
            }
        }
    }
}
}

```

Q7. Banking System

```

package Week2;
import java.util.*;

public class Qseven {

    public static void main(String[] args){
        Scanner input = new Scanner(System.in);
        System.out.print("Enter the current account balance : ");
        float currentAccountBalance = input.nextFloat() ;
        while (true) {
            System.out.println("Choose an option: ");
            System.out.println("1. Deposit");
            System.out.println("2. Withdraw");
            System.out.println("3. Check for fraud");
            System.out.println("4. Exit");
            System.out.print("Enter your choice: ");
            int choice = input.nextInt();
            switch (choice) {
                case 1:
                    System.out.print("Enter deposit amount: ");
                    float depositAmount = input.nextFloat();
                    currentAccountBalance += depositAmount;
                    System.out.println("New balance: " + currentAccountBalance);

```

```

        break;
    case 2:
        System.out.print("Enter withdrawal amount: ");
        float withdrawalAmount = input.nextFloat();
        if (withdrawalAmount > currentAccountBalance) {
            System.out.println("Insufficient funds!");
        } else {
            currentAccountBalance -= withdrawalAmount;
            System.out.println("New balance: " + currentAccountBalance);
        }
        break;
    case 3:
        if (currentAccountBalance < 0) {
            System.out.println("Fraud detected! Negative balance.");
        } else {
            System.out.println("No fraud detected.");
        }
        break;
    case 4:
        System.out.println("Exiting...");
        input.close();
        System.exit(0);
    default:
        System.out.println("Invalid option. Please try again.");
}
}
}
}
}

```

Q8. Rock, paper Scissors game

```

package Week2;
import java.util.*;
public class Qeight {

    public static void main(String[] args){
        Scanner input = new Scanner(System.in);
        System.out.println("Welcome to the game!\n0. Rock\n1. Paper\n2.
Scissors");
        System.out.print("Enter a number between 0 and 2: ");
        int userNumber = input.nextInt();
        int randomNumber = new Random().nextInt(3);
    }
}

```

```

        System.out.println(randomNumber);
        if (userNumber == randomNumber){
            System.out.println("It's a tie!");
        }
        else if (userNumber == 0 && randomNumber == 2 || userNumber == 1 &&
randomNumber == 0 || userNumber == 2 && randomNumber == 1){
            System.out.println("You win!");
        }
        else{
            System.out.println("You lose!");
        }
    }
}

```

Q9. :

1. Output Prediction

All the codes give the same output. So the codes are equivalent

2. Guess the output.

```
int i = 1; i += ++i + i++ + ++i;
```

i = 9

```
int j = 1; j += ++j + j++ + ++j;
```

j = 9 (assuming syntax fixed)

```
int k = 1; k += k++ + k++ + ++k;
```

k = 8

3. Right Statement

```
if ((age < 17 ) || (age > 85))
{/don't drive!}
```